

SIM-CE: The SIM Collaborative Environment

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What is SIM-CE?

- A generalizable shared workspace
- Links multiple users with audio, video, shared applications, and persistent datasets
- Specialized to IMOS
- Supports collaborative IMOS work
- Funded by NASA's Advanced Information Sciences Research Program

Why?

- SIM is a large, complex project
- Workers are not colocated
- Need to enhance communications
- Need to share tasks, including training
- Need for teleconferencing with tools
- Aid documentation with persistent objects

Scenarios

- rapid exploration of ideas
- dispersal of “corporate knowledge”
- reduce project-related travel
- shared virtual meeting spaces with integrated tools
- collaborative document creation
- teleoperation of equipment

Architecture

- Client-server / client-client
 - central server
 - maintains state
 - supports connectivity between users
 - clients manage local interfaces
 - user interfaces
 - application interfaces
 - client to client multicast
 - audio
 - video

Architecture (more)

- Server uses object-oriented multiuser DB
 - supports a (very) large number of simultaneous users with low-bandwidth requirements
 - versatile in-database programming language gives a way to create functionality
 - networking ability provides means to link to many different distributed services

Architecture (more)

- Client implemented in Java
 - portable, development environment is Macintosh, Sparc
 - takes advantage of large code base
 - easily maintained, extended, and distributed

System Resource Needs

- Server
 - Unix machine on network
 - 64M RAM
 - 1G Disk space
- Client
 - must support Java (PC, Mac, most UNIX)
 - audio (microphone, speaker/headphones)
 - video camera (optional)

Development schedule

- Start - June 97
- User test - June 98
- Delivery of functional system - Jan 99